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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/603,990	06/26/2003	Mi-Sook Nam	053785-5120	3882
9629	7590	12/29/2005	EXAMINER	
MORGAN LEWIS & BOCKIUS LLP 1111 PENNSYLVANIA AVENUE NW WASHINGTON, DC 20004			WANG, GEORGE Y	
			ART UNIT	PAPER NUMBER
			2871	

DATE MAILED: 12/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/603,990	NAM ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	George Y. Wang	2871	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 29 August 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) 10,11 and 19-21 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9 and 12-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 June 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on August 29, 2005 has been entered.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 1-8 and 12-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okamoto et al. (U.S. Patent No. 6,281,952, hereinafter "Okamoto") in view of Zhang et al. (U.S. Patent No. 6,396,470, hereinafter "Zhang"), and in further view of Kobashi (U.S. Patent No. 6,839,107).

4. Regarding 1-3 and 12-13, Okamoto discloses a transfective liquid crystal display (LCD) method and device (fig. 4, ref. 200) comprising a substrate (fig. 24, ref. 29) having a reflective portion (fig. 24, ref. 9) and a transmissive portion (fig. 24, ref. 10), a gate line (fig. 23a, ref. 23) on the substrate, a data line (fig. 23a, ref. 24) crossing the gate line and defining a pixel region (fig. 23a, ref. 20), a thin film transistor (TFT) (fig. 23a, ref. 21) connected to the gate line and the data line, a first organic material layer (fig. 24, ref. 25) made of photoacrylic resin (col. 81, lines 34-35) in the pixel region

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having a plurality of uneven patterns at the reflective portion, and a reflective layer (fig. 24, ref. 19) on the organic material layer having a transmissive hole at the open portion.

However, the reference fails to specifically disclose a second organic material layer on the first organic material layer having an open portion at the transmissive portion as well as a plurality of uneven patterns alternating with uncovered portions of the substrate within the reflective portion excluding a peripheral portion of the pixel region.

Zhang discloses an LCD device having a second organic material layer (fig. 20, ref. 181) on the first organic material layer (fig. 20, ref. 1061c) having an open portion at the transmissive portion.

Kobashi discloses an LCD device having a plurality of uneven patterns alternating with uncovered portions of the substrate (substrate portions fig 5, ref. 10 under reflective portions fig. 5, ref. 8c) within the reflective portion (fig. 5, ref. 8a) excluding a peripheral portion of the pixel region (fig. 5, ref. 100a).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have a second organic material layer on the first organic material layer having an open portion at the transmissive portion since one would be motivated to provide high speed operation (Zhang, col. 20, lines 53-54) and improve the incidence of light use efficiency (col. 22, lines 38-40). In fact, Okamoto discloses the method of forming the organic layers by means of providing a number of sublayers by a successive steps of pattern irradiating, developing, and curing to form a layer having an open portion at the transmissive portion (Okamoto, col. 81, lines 33-40) to show that

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Okamoto is not closed to the notion of additional organic layers. Furthermore, it would have been obvious to one of ordinary skill in the art to have a plurality of uneven patterns alternating with uncovered portions of the substrate within the reflective portion excluding a peripheral portion of the pixel region since one would be motivated to reduce the cost of manufacturing by having the reflector formed on uneven patterns as described above to also have a diffusion function (Kobashi, col. 2, lines 25-30).

5. As per claims 4-5 and 14-15, Okamoto discloses the LCD device as recited above having a silicon nitride layer (col. 80, lines 51-52) covering the gate line, the data line, and the TFT.

6. As to claims 6-8 and 16-17, Okamoto discloses the LCD device as recited above having a pixel electrode (fig. 24, ref. 20) on the reflective layer, a TFT comprising a gate electrode (fig. 24, ref. 23), an active layer (col. 80, lines 52-55), and source (fig. 24, ref. 28) and drain (fig. 24, ref. 22) electrodes, and a gate pad connected to the gate line (fig. 24, ref. 26), a data pad connected to the data line (fig. 24, ref. 26), and a capacitor electrode (fig. 24, ref. 27) overlapping the gate line.

7. Claims 9 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okamoto, Zhang, and Kobashi, and in further view of Nishida et al. (U.S. Patent Pub. No. 2002/0159016, hereinafter "Nishida").

Okamoto, when modified by Zhang and Kobashi, discloses the LCD device as recited above, however, the reference fails to specifically disclose the second organic material having a drain contact hole exposing the drain electrode, a capacitor contact hole exposing the capacitor electrode, a gate pad contact hole exposing the gate pad, and a data pad contact hole exposing the data pad.

Nishida discloses an LCD device with an organic material layer having a drain contact hole exposing the drain electrode, a capacitor contact hole exposing the capacitor electrode, a gate pad contact hole exposing the gate pad, and a data pad contact hole exposing the data pad (fig. 8, ref. 39b, 39a).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have included a drain contact hole exposing the drain electrode, a capacitor contact hole exposing the capacitor electrode, a gate pad contact hole exposing the gate pad, and a data pad contact hole exposing the data pad since one would be motivated to prevent the occurrence of vertical cross-talk without reducing the aperture ratio (pg. 2, [0027]).

### ***Response to Arguments***

8. Applicant's arguments filed August 29, 2005 have been fully considered but they are not persuasive.

Applicant amends independent claims 1 and 12 to recite a plurality of uneven patterns consisting of a first organic material layer within the reflective portion where the uneven patterns are "partially covering the substrate." Although this recitation was

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never previously claimed, it does little to distinguish the claimed invention from the prior art references.

Applicant present several arguments. First, Applicant argues that the Okamoto reference fully covers the substrate and therefore do not “partially cover the substrate.” However, it is noted that because the Okamoto reference discloses that the organic material layer (25) in the reflective portion (9) fully covers the substrate, it also, by definition, covers the substrate “partially.”

Applicant also argues that Okamoto cannot be combined with Kobashi since they teach a different positions for the TFT. Applicant asserts that because Okamoto discloses a TFT formed “under” the reflective display section and that Kobashi discloses a TFT formed “adjacent” to the reflective portion, the combination of Kobashi would frustrate the intended purpose and benefit of Okamoto. However, it is noted that the cited portion in which Applicant gives support for the teaching in Okamoto’s TFT does not suggest anywhere that the TFT is “under” the reflective display section. Rather, the passage merely teaches that the TFT is “provided to” the reflective display region. Even assuming Okamoto teaches a TFT that is formed “under” the reflective region, it is clear that the TFT of Kobashi is also under irregular portions. The fact that Kobashi’s irregular portions can be “easily” formed in the area in which the TFT is not formed” does not preclude the combination with Okamoto. Thus, Applicant’s contention that the combination of Kobashi frustrates the intended purposes and benefit of Okamoto is unsubstantiated and not persuasive.



Applicant also argues that even if the Okamoto and Kobashi references were combinable, the uneven patterns of Kobashi are “formed by layers left over during the formation of the TFT” contrasts “a plurality of even patterns consisting of a first organic material layer” that is recited in claims 1 and 12. First, it is unclear what Applicant’s argument is. It appears that Applicant is suggesting that Kobashi’s multiple layers is not the same as the claimed inventions first organic material layer. However, it is not certain how Applicant then concludes that Kobashi (and Okamoto) fail to teach or suggest the limitations of the claim. Second, even if Applicant’s argument can be properly and logically understood, it is noted that there is nothing in the Kobashi reference and nothing in the claims to preclude that the multiple layers formed over the TFT of Kobashi is not inclusive of a first organic material layer. The claims merely recite a plurality of uneven patterns consisting of a first organic material within the reflective portion that partially covers the substrate. Kobashi clearly teaches a plurality of uneven patterns alternating with uncovered portions of the substrate (substrate portions fig 5, ref. 10 under reflective portions fig. 5, ref. 8c) within the reflective portion (fig. 5, ref. 8a) and provides more than sufficient motivation to combine with Okamoto to reduce the cost of manufacturing by having the reflector formed on uneven patterns as described above to also have a diffusion function (Kobashi, col. 2, lines 25-30).

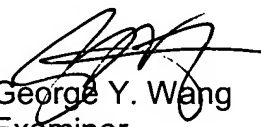
As a result, Applicant amendment and arguments do not place the application in condition for allowance at this time.

***Conclusion***

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to George Y. Wang whose telephone number is 571-272-2304. The examiner can normally be reached on M-F, 8 am - 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert H. Kim can be reached on 571-272-2293. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
George Y. Wang  
Examiner  
Art Unit 2871

December 27, 2005